



STATE ROUTE 167 TRANSPORTATION CONCEPT REPORT



CALTRANS DISTRICT 9
OFFICE OF SYSTEM PLANNING
AUGUST 2009



STATE ROUTE 167

TRANSPORTATION CONCEPT REPORT

PREPARED
BY
CALTRANS
DISTRICT 9
OFFICE OF SYSTEM PLANNING

AUGUST 2009

Additional Information

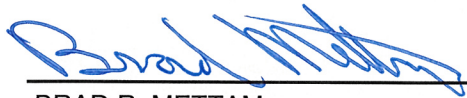
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Bishop, California 93514
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REPORT SIGNATURE SHEET

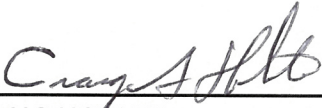
APPROVAL RECOMMENDED BY:



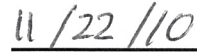
BRAD R. METTAM
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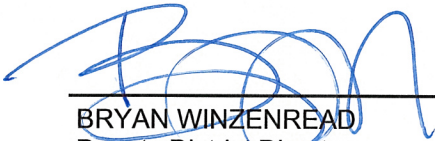
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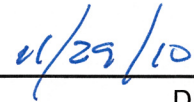


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APPROVED BY:



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District 9 Director



DATE

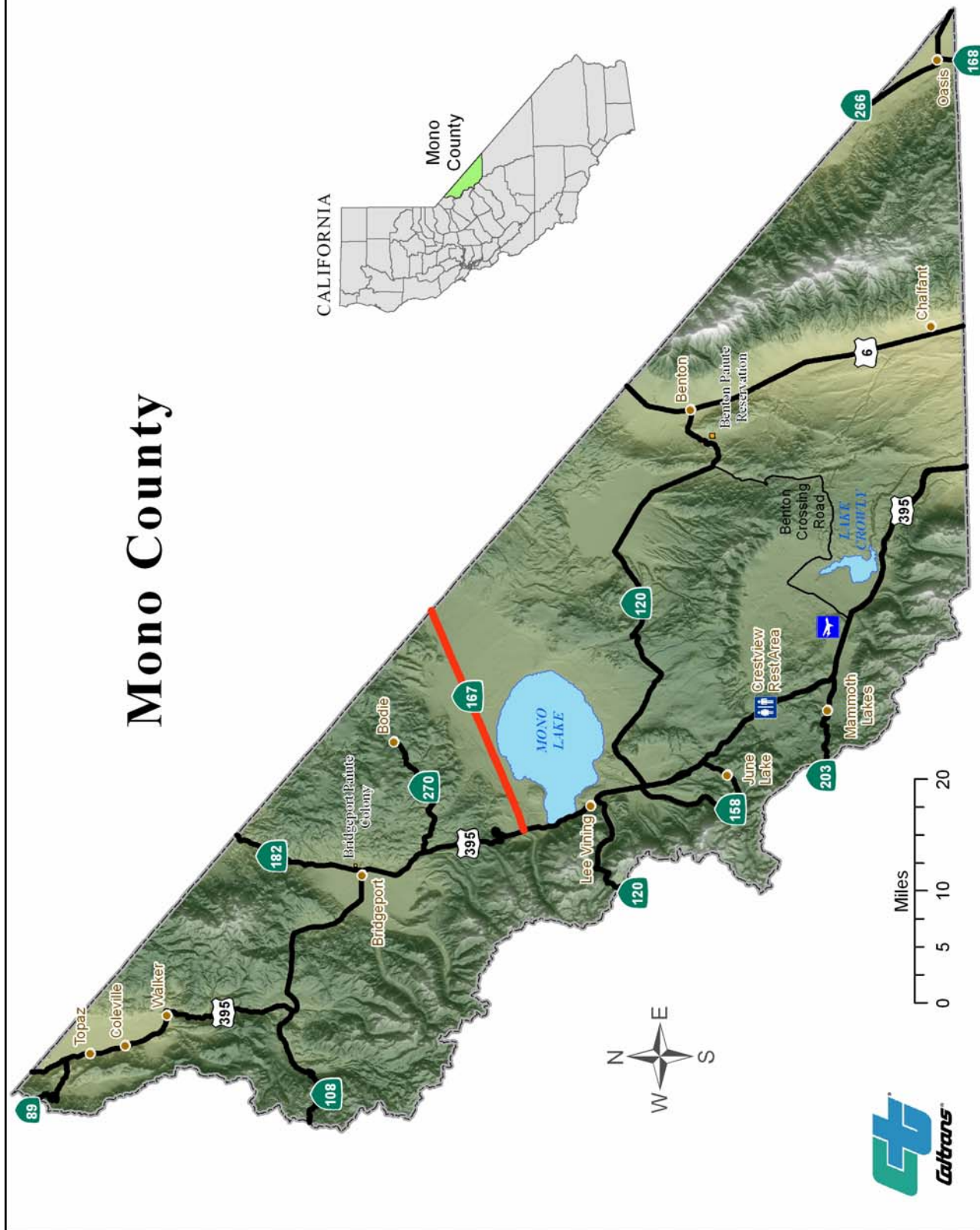
Approval for State Route 167 Transportation Concept Report

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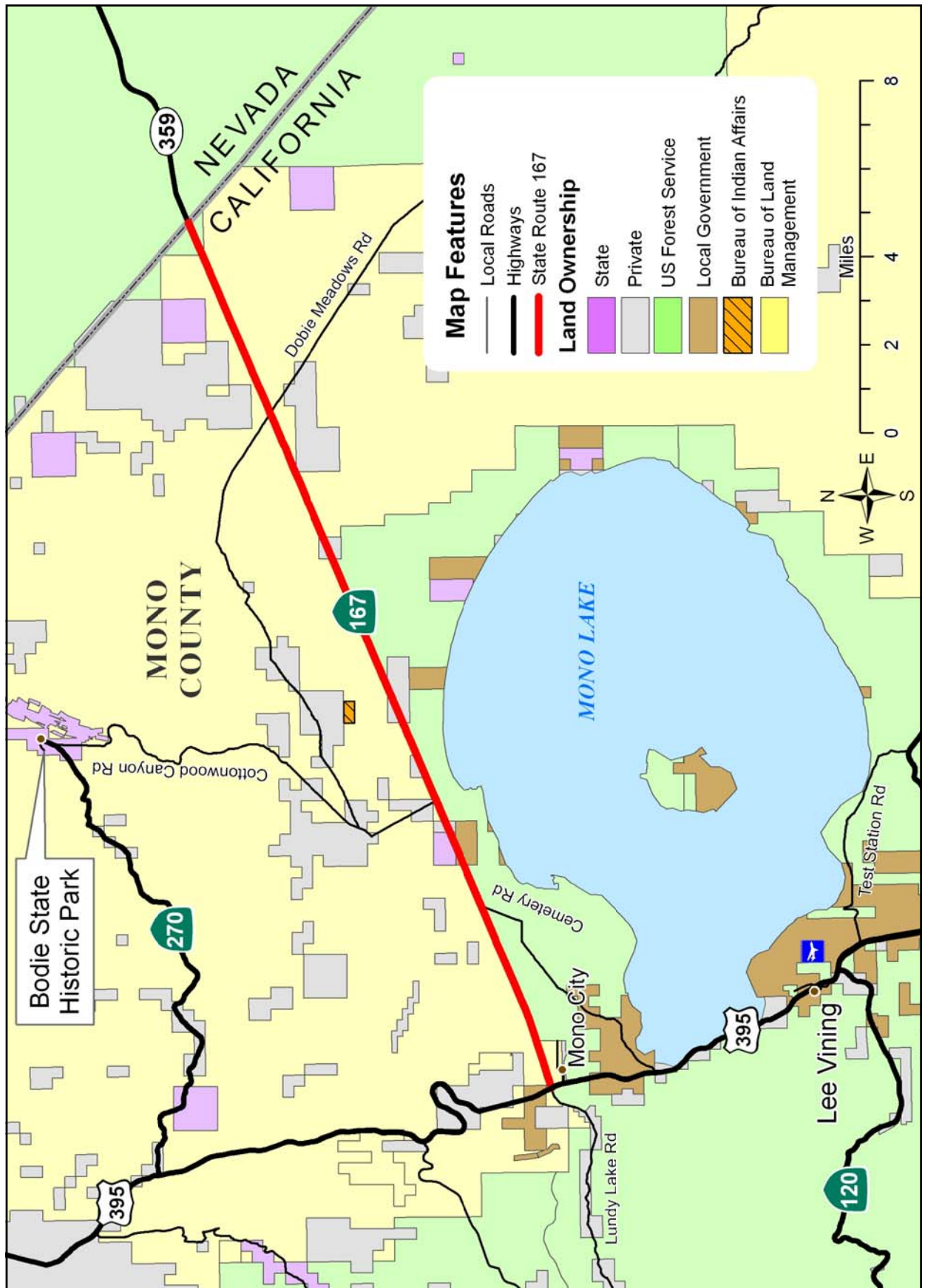
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STATE ROUTE 167 - CORRIDOR

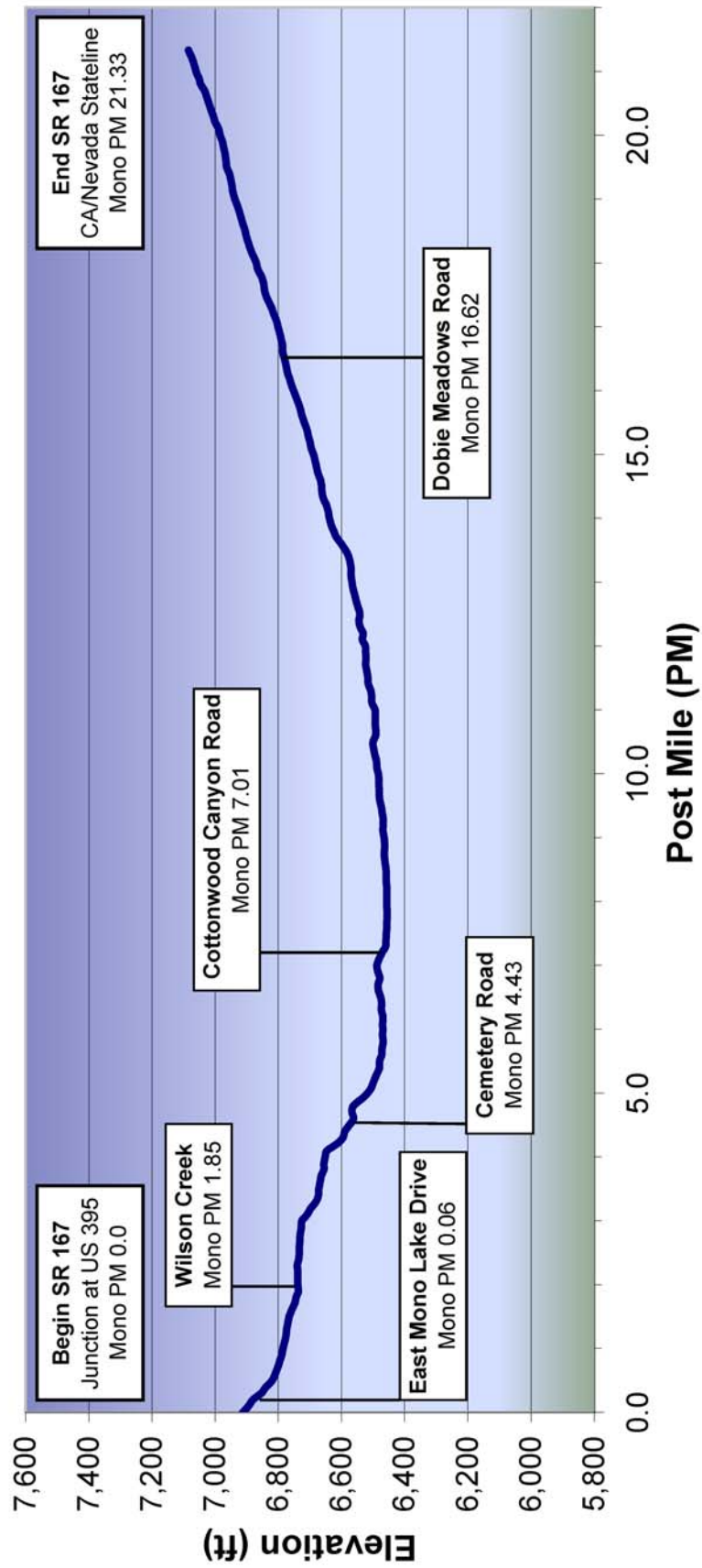
Mono County



STATE ROUTE 167 - LAND OWNERSHIP



SR 167 ELEVATION PROFILE **Mono PM 0.0 - 21.33**



State Route 167 Transportation Concept Report

INTRODUCTION

The Transportation Concept Report (TCR) is a long-range planning document that describes the current characteristics of the transportation corridor and establishes a 20-year planning concept. The TCR defines the California Department of Transportation's (Caltrans) goals for the development of the route, and broadly presents concepts for highway improvements that may be used to reach those goals. During development of a TCR, Caltrans' objective is to have local, regional, private sector, and State consensus on corridor concepts, planning strategies, and improvement priorities.

All information in this TCR is subject to revision as conditions change and new information is obtained. Consequently, the nature and the size of identified improvements may change as they move through the project development stages. Final determinations are made at the time of project planning, environmental analysis, and design.

Level of Service (LOS) is established through travel forecasting data analysis, using regional models where available. The calculations to determine LOS are based on the year 2000 Highway Capacity Manual (HCM). The 2000 HCM includes substantial changes to capacity calculations compared to past editions of the HCM. As a result, LOS calculations may differ from former reports or studies that are based on earlier editions.

ROUTE CONCEPT AND CONCEPT FACILITY

A Route Concept is comprised of a Concept Level of Service (LOS) and a description of the Concept Facility. The description of a facility reflects its number of travel lanes and degree of access onto the highway by local streets and driveways.

The Concept Facility will establish the amount of vehicle-carrying capacity necessary to achieve the Concept LOS with forecasted traffic volumes. Concept LOS reflects the acceptable level or quality of operations that is appropriate for each route segment, and is considered to be reasonably attainable within the 20-year planning period.

This report covers all of SR 167 as one segment. Caltrans will emphasize continued rehabilitation and operational improvements on State Route (SR) 167.

Table 1 summarizes the segment length, current and concept facility, and the current and concept LOS for SR 167. The Ultimate Facility Concept is the goal for the route beyond the twenty year planning horizon. It also shows the projected LOS for a 10-year and 20-year period, based on the region's 2006 calculated growth rate.

Table 1 – SR 167 Facility Summary									
Segment County Post-Mile	Segment Length	Current Facility	Concept Facility	Ultimate Facility	2007 AADT	Current LOS	10-Yr LOS	20-Yr LOS	Route Concept LOS
1 Mono 0.00 - 21.33	21.33 miles	2-C	2-C	2-C	150	A	A	A	C

For acronyms used in this table, see page 12

ROUTE SYNOPSIS

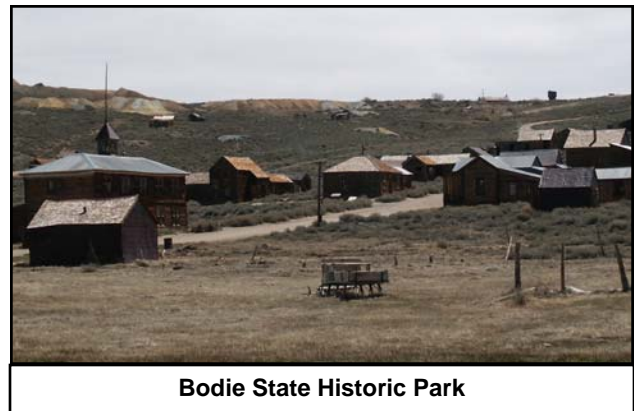
State Route 167 begins at the junction of US 395, 6 miles north of the community of Lee Vining in Mono County. It is a 2-lane conventional highway in rolling terrain that is classified as a Rural Minor Arterial, and runs in an easterly direction for 21.33 miles to the Nevada State Line. There are County, US Forest Service and BLM roads that access the state highway. Interregional and recreational travelers share SR 167 with local residential circulation.

The elevation of SR 167 varies between 6,450 and 7,100 feet. For a portion of the route the highway traverses the northern boundary of the Mono Basin National Forest Scenic Area and Mono Lake, abutting Inyo National Forest and Bureau of Land Management (BLM) lands. At approximately the last mile of the route (PM 20.66), it enters the Humboldt-Toiyabe National Forest. Mono County includes SR 167 in the *County Designated Scenic Highway System*, which restricts the type of development that can occur along the corridor. The highway is currently not eligible for state scenic highway designation.

ROUTE HISTORY

SR 167 was added to the California State Highway System in 1953. Bodie State Historic Park, a genuine gold-mining ghost town, is approximately 11 miles north of SR 167 via Cottonwood Canyon Rd.

The discovery of gold in 1875, transformed Bodie from a miner's camp into the second largest city in California. By 1881, the *Bodie Railway and Timber Company* had acquired 12,000 acres of mature pine forest near Mono Lake and completed a 32-mile narrow gauge railway from the Mono Mills timber company to Bodie. The output of the mill was estimated to be 15 million ft of lumber and 100,000 cords per year. Within 11 years the gold-rush bubble had burst, and by 1932 a disastrous fire destroyed 90% of the town. Designated as a National Historic Site and a State Historic Park in 1962, the small part of the town that survived the fire provides a snapshot of the Eastern Sierra's unique pioneer and mining history.



Bodie State Historic Park

COMMUNITY ISSUES & PUBLIC OUTREACH

Improvements to SR 167 will be planned using a collaborative interdisciplinary approach involving all stakeholders. This approach will attempt to integrate and balance community, aesthetic, historic, and environmental values with regard to transportation safety, maintenance, and performance goals. Caltrans consults with all stakeholders regarding SR 167 proposed projects.

PURPOSE OF SR 167

SR 167 begins at the junction of US 395 (MNO PM 58.2), and runs in a easterly direction for 21.33 miles to the Nevada State line. The highway provides access to the small community of Mono City (pop.151) via both East Mono Lake Drive (PM 0.60) and Cemetery Rd (PM 4.43). The highway provides access to Bodie State Historic Park via Cottonwood Canyon Rd (PM 7.01). The route serves recreational travelers to the Mono Basin National Forest Scenic Area and facilitates the movement of goods and people from California to Nevada.



Westbound on SR 167 at Cottonwood Canyon Rd

In the event of emergency closures on US 395, SR 167 functions as an easterly loop around US 395, diverting traffic into Nevada where it is signed as Nevada Highway 359. Highway 359 junctions with US 95 at Hawthorne, Nevada. US 95, a primary north/south corridor, intersects US 50 and Interstate 80, providing alternate routes for travelers bound for northern Nevada and California.

SR 167 is listed in the National Truck Network (NTN) as a California Legal Network Route, which provides truck access to the entire state highway system, with King Pin to Rear Axle advisory of 40 ft maximum for two or more axles.

The functional classification, description, facility type, right of way width and rights, route purpose, and truck networks for SR 167 are defined in Table 2:

Table 2 - SR 167 Facility Purpose

Segment County Post-Mile	Functional Class	Description	Present Facility	R/W Width & Rights	Route Purpose	National Truck Network	See Page #
1 Mono 0.00 - 21.33	Rural Minor Arterial	Junction at US 395 Near Lee Vining to Nevada Stateline	2-C	140 ft, Prescriptive, Fee	Local, Recreational, Interregional, Goods Movement	CA Legal Network (CL-40)	10

For acronyms used in this table, see page 12



Westbound on SR 167 from US 359 at the Nevada Stateline

THE MONO BASIN NATIONAL FOREST SCENIC AREA

The *Mono Basin National Forest Scenic Area* is surrounded by the eastern slope of the Sierra Nevada Mountains to the west and by the Wassuk Range to the east. Mono Lake lies in the heart of the basin at 6,240 ft elevation and is one of the oldest watersheds in North America. The lake is 13 miles wide and 8 miles long with highways SR 167, SR 120, and US 395 within the *Scenic Area*. For millennia, salts and minerals from mountain streams have fed the lake, which has no outlet. This unique environment harbors photosynthesizing algae that can only exist in saline water. The algae nourishes a food web of alkali flies and brine shrimp, which in turn feed various bird populations that migrate to Mono Lake. The lake is the second largest California Gull nesting site in North America (44,000-65,000 birds).



Mono Lake as seen from Mount Dana

Mono Lake lost 31% of its surface area and doubled in salinity after Los Angeles diverted four tributary streams into the LA aqueduct in 1941. Salinity critically affects the ability of aquatic organisms to thrive, and therefore is a crucial factor in the lake's ecosystem. Today, the salinity is 2.5 times greater than the Pacific Ocean and will increase if the lake level falls. Since 1982, the limestone tufa towers (created by underwater springs) and lakebed land are protected with the establishment of the Mono Lake Tufa Natural State Reserve. In 1984, the U.S. Congress designated the *Mono Basin National Forest Scenic Area*, the first in U.S. history, encompassing 116,000 acres of land (see Exhibit A, page 8). Water rights rulings in 1986 & 1994 have helped reverse the decline, and the lake is expected to reach what federal and state legislation set as "environmentally sustainable" levels by 2014.

Extensive standards and guidelines for the use of lands within the Scenic Area are described in the *Mono Basin Scenic Area Comprehensive Management Plan*. This plan provides specific direction for National Forest lands and management guidelines for non-federal lands within the Basin. The multiple agencies that share responsibility and provide stewardship for Mono Lake, Mono Basin, and its adjacent resources are:

Federal: U.S. Forest Service (USFS); U.S. Army Corps of Engineers (USACE); Federal Highways Administration (FHWA); Bureau of Land Management (BLM); Environmental Protection Agency (EPA); and U.S. Fish and Wildlife Service (USFWS).

State: California State Parks (CSP); California State Lands Commission (CSLC), State Water Resources Control Board (SWRCB); California Department of Fish and Game (DFG); Lahontan Regional Water Quality Control Board (LRWQCB); Great Basin Air Pollution Unified Control District (GBAPUCD), and California Department of Transportation (Caltrans).

Stakeholders: Mono County; The Mono Lake Committee; Los Angeles Department of Water and Power (LADWP); and Southern California Edison Company (SCE).



Vista View of Mono Lake and Negit Island

TRANSPORTATION PLANNING AND LAND USE ISSUES

Caltrans District 9 and Mono County work closely together to balance Caltrans goals and policies with the transportation needs of the county. The Mono County Regional Transportation Plan (RTP) states the main concern on SR 167 is continued adequate maintenance. The following objectives in the Bodie Hills Policies section of the Mono County RTP are:

GOAL

“Provide for multiple modes of access to Bodie State Historic Park to enhance safe convenient travel and accessibility ...”

OBJECTIVE B: Provide for alternative modes of travel into Bodie.


Action 2.11: Pursue development of a Bodie loop bike route along Highway 270, *Cottonwood Canyon Road*, *Highway 167*, and Highway 395. The route should consist of a shared roadway with minimum 4-foot paved shoulder. *Cottonwood Canyon Road* should ultimately be paved with similar shoulders.

OBJECTIVE C: Provide transportation amenities that facilitate use of multiple modes of travel, such as scenic turnouts, interpretive kiosks, a common signing program, and a transit hub.

Action 2.2: Continue to seek methods to reduce the washboard and dust problems on routes leading in the Area of Critical Environmental Concern”

Action 2.5: Recommend that Mono County pave the *Cottonwood Canyon Road*. Until it is paved, the Department of Public Works should apply a dust inhibitor or road sealant where needed.

STATE ROUTE 167 - SEGMENT FACT SHEET

Segment 1		Length Miles 21.33		Segment Location	
		Back PM 0.0			
Present Facility 2-C		Ahead PM 21.33			
Present LOS A					
Concept Facility 2-C					
Concept LOS C					
Ultimate Facility 2-C					
Segment Description					
SR 167 is a two-lane conventional highway in Mono County that is classified as a Rural Minor Arterial in rolling terrain. The highway begins at its junction with US 395 (MNO PM 58.2), 6 miles north of the community of Lee Vining and runs in an easterly direction for 21.33 miles to the Nevada State Line. The elevation varies between 6,450 and 7,100 ft with the majority of the road well maintained and posted speed limits of 65 mph. Along SR 167 East Mono Lake Drive (PM 0.60) provides access to Mono City, the largest community adjacent to the highway. Cemetery Road (PM 4.43), Cottonwood Canyon Road (PM 7.01), and Dobie Meadows Road (PM 16.62) are the other major roads intersecting the highway. SR 167 continues on as Nevada Highway 359, ending at its junction with US 95 in Hawthorne, Nevada. Besides serving regional and interregional traffic, this segment provides access to Bureau of Land Management (BLM), United States Forest Service (USFS), and private lands. For maintenance funding purposes, the California State Highway System uses a Maintenance Service Level (MSL), which classifies the highway according to its role and volumes. On a MSL scale of 1 to 3, this segment is a Class 3.					
Route Concept Improvement Recommendations					
Traffic activity on the State highway varies seasonally and during peak periods due to its connectivity to/from Nevada Highway 359 and US 95 in Nevada (via NV 359). When the facility is scheduled for rehabilitation, shoulder widening to provide for a Class-3 Bike lane along the route should be considered. There are numerous undefined access points along the state highway from dirt roads on government and private lands. Consider defining and paving these access aprons, which may degrade shoulders and pavement.					
Programmed Projects					
The Wilson Creek Drainage project EA 09-29520 (MNO PM 1.8) is under construction in the Minor program to improve the culvert at Wilson Creek. This project is scheduled to be completed in the fall of 2009.					
Highway Network Affiliation				Highway Information	
Functional Classification: Rural: Minor Arterial					
National Hwy System	No	Scenic Highway	Non-Scenic		Feet
California Freeway Expressway System	No	National Truck Network	California Legal Network	Median Width	0
STRAHNET	No	Life Line	No	Shoulder Width	2
Regionally Significant	No	IRRS	No	Lane Width	12

STATE ROUTE 167 - SEGMENT FACT SHEET

Air Quality Comments

This highway is located within the Great Basin Unified Air Pollution Control District. For National Ambient Air Quality Standards (NAAQS), this area is in attainment of ozone (8 hour) and in nonattainment for particulate matter (PM-10). For State of California Ambient Air Quality Standards, this area is in nonattainment for both ozone and particulate matter (PM-10).

Transit Service / Modal Options

Transit services are not provided on this highway. Commercial and charter air travel is available at the Mammoth Yosemite Airport. Bicycles are permitted on all state highways in Mono County.

Land Use

This highway is adjacent to low density residential, local government, State, BLM, USFS, and private lands. The primary land holders in the area are BLM and USFS. The community of Mono City (pop. 151) is the largest community adjacent to SR 167. Bodie State Historic Park is 11 miles north of SR 167 and can be accessed via Cottonwood Canyon Rd or SR 270.

Environmental Concerns

No known endangered or threatened species are located within this segment. SR 167 runs through what Caltrans considers a culturally sensitive area. Any future work along the highway that goes beyond the current edge of the pavement, or disturbs any natural ground, will require a cultural resource evaluation by a licensed Caltrans archaeologist.

Right of Way Comments

The highway right-of-way varies in width from 132-400 ft, and is held by easement, fee title, and BLM map application.

Traffic Analysis Comments

Fatality + Injury and Total Actual Accident Rates are below the statewide average for a similar facility. The primary collision factor is improper turn, resulting in rollovers. Sections of the highway are within open range cattle areas with multiple warning signs indicating these areas. SR 167 could be impacted to flooding and blowing dust. Winter snow and ice conditions can impact the road surface, and as a result chain requirements and/or road closures do occur on SR 167. Advisory signs on SR 167 are: "Snow Removed Daylight Hours Only"; a flashing beacon flood advisory sign "Road Closed 22 Miles Ahead due to Flooding"; and a turn-able chain advisory sign "Chains Required, No Exceptions".

Highway Operation Factors					
Traffic Forecasts		Design Hour Volumes		Level of Service	
2007 AADT	150	2007 DHV	30	2007	A
2017 AADT	160	2017 DHV	32	2017	A
2027 AADT	170	2027 DHV	34	2027	A
Calculation Factors					
Fatality + Injury Actual Accident Rate	0.21	Total Actual Accident Rate	1.07	% Traffic Growth 0-10 Years	0.5%
Fatality + Injury Statewide Avg Rate	1.06	Total Statewide Average Rate	2.49	% Traffic Growth 10-20 Years	0.5%
Directional Split	50/50	Terrain	Rolling	Percent Trucks	5.5%

ACRONYMS

2-C	Two-Lane Conventional Highway
4-C	Four-Lane Conventional Highway
AADT	Average Annual Daily Traffic
BLM	Bureau of Land Management
Caltrans	California Department of Transportation
HCM	Highway Capacity Manual
LOS	Level of Service
MSL	Maintenance Service Level
NAAQS	National Ambient Air Quality Standards
NTN	National Truck Network
PM	Post Mile
R/W	Right-of-Way
SHOPP	State Highway Operation and Protection Program
SR	State Route
TCR	Transportation Concept Report

GLOSSARY

Annual Average Daily Traffic - AADT

The average 24-hour volume of traffic that is calculated over a year

Concept Facility

Highway facility type and characteristics considered viable with or without improvement within the 20-year planning period given financial, environmental, planning, and engineering factors

Concept LOS

Highest and best Level of Service that can be achieved in the 20-year planning period based on the concept facility

Conventional Highway

A highway without controlled access. Grade separations at intersections and access control may be used when justified.

Design Hour Volume - DHV

The 30th highest hour traffic volume in a selected year for a given segment

Directional Split

The percentage of traffic in the peak direction during the peak hour

Functional Classification

Guided by Federal legislation, refers to a process by which streets and highways are grouped into classes or systems according to the character of the service that is provided (i.e. Principal and Minor Arterial Roads, Collector Roads, and Local Roads)

Level of Service - LOS

A qualitative rating of the effectiveness of a transportation system in serving travel, ranks A (best) through F (worst)

Programmed Projects

Capacity-enhancing, safety, and/or operational improvement projects programmed through STIP or SHOPP

Route Designations

Identifies whether or not the subject segment of a route is designated as being part of the National Highway System, Interregional Highway System, California Freeway/Expressway, Scenic Highway, National Truck Network, Strategic Highway Network, and highways of regional significance

REFERENCES AND INFORMATION

Bureau of Land Management, Bishop, CA
Digital Highway Inventory Photography Program (DHIPP), Caltrans HQ Project Delivery, 2002
Highway Capacity Manual, 3rd edition, 2000
Journal of the Mono Basin Historical Society, Vol 14, Issue 1, Winter 2005-2006
Long-Term Socio-Economic 2008 Forecasts, Caltrans, <www.dot.ca.gov/hp/tpp/offices/ote/>
Mono County General Plan Update, Circulation Element, 2007
Mono County Regional Transportation Plan, Update, 2008
Mono Lake Committee, Ecology: Bird life, <www.monolake.org/about/ecobirds>
Post Mile Log, Caltrans District 9, 2007
SR 167 Route Concept Report, Caltrans District 9, 1985
Table B Collision Data, SR 167, 2005–2007
The Mono Basin Ecosystem, National Academy Press, Washington D.C., 1987
Transportation System Development Plan, Caltrans District 9, 2006
USDA Forest Service Region 5 :North Mono Basin Road Analysis-Appendix D, 2001

Environmental Sources of Information for SR 167:

Great Basin Unified Air Pollution Control District

157 Short Street
Bishop, CA 93514-3537
(760) 872-8211

Lahontan Regional Water Quality Control Board

2501 Lake Tahoe Blvd.
South Lake Tahoe, CA. 96150
(530) 544-2271

California Natural Diversity Database (CNDDB), 2008

On SR 202, an initial assessment of known biological resources in a 2000-foot wide corridor is listed under Environmental Concerns within the segment fact sheets. This information does not represent all possible environmental constraints that may exist, such as cultural resources (historic and pre-historic), floodplain encroachment, hazardous materials, noise, and visual impacts. Any project that is being considered for programming would require environmental clearance in compliance with all Federal, State, and Local environmental laws and regulations.

California Climate Change Law: AB 32 and SB 375

Caltrans is working through the project development process to help local agencies understand, prepare, and comply with the new California climate change laws, AB 32 and SB 375, by incorporating planning, environmental, construction, and maintenance strategies that may reduce greenhouse gas emissions, which are based upon sound and current science.